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ABSTRACT

The Louis D. Brandeis High School Bilingual Program provides English and Spanish language instruction, academic courses, and supportive services for Spanish speaking students of limited English proficiency. This report describes the program as it was implemented in 1980-81. The program description includes background and context; student characteristics; organization and funding; faculty relations; the instructional component, consisting of English as a Second Language, native language instruction, mathematics, science, and social studies; curriculum development activities; counseling services; staff development; parent involvement; and evaluation. Evaluation results indicate that: (1) students had positive attitudes toward the program; (2) program attendance rates were higher than the school's attendance rates; (3) several program participants received academic honors; and (4) in general, moderate to highly significant gains were made in English syntax and language fluency, native language arts, mathematics, science, and social studies, although some students failed to reach the program achievement criteria. Recommendations for program improvement are presented. (MJL)

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FINAL EVALUATION REPORT

E.S.E.A. TITLE VII

Grant Number: G007804523

Project Number: 5001-56-17629

N.Y.S. Chapter 720

Project Number: 5001-56-18402

LOUIS D. BRANDEIS HIGH SCHOOL

BILINGUAL PROGRAM

1980-1981

Director:
Ms. Emilia Cardona

Principal:
Mr. Murray Cohn

Prepared by the
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UD 022 607

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LOUIS D. BRANDEIS HIGH SCHOOL
BILINGUAL PROGRAM

Location:	145 West 84th Street New York, New York 10024
Year of Operation:	1980-1981, third and final year of funding
Target Language:	Spanish
Number of Participants:	Approximately 800 students
Project Director:	Ms. Emilia Cardona
Principal:	Mr. Murray Cohn

INTRODUCTION

Located on 84th Street between Columbus and Amsterdam Avenues, Louis D. Brandeis High School draws students from an attendance area which reaches through the city -- northward to 155th Street south to the Battery -- and encompasses much of Manhattan's west side. Hispanic students, including a burgeoning Dominican population, account for more than half the school's total enrollment. The school produced figures for program enrollment ranging from 700 to 973 for a project originally geared to 400; this increase has taken place in the context of a decline in the school's overall enrollment.

Although bilingual programs have been operating at Brandeis since 1972, the present bilingual project in 1980-81 completed the third and final year of a Title VII grant; supplementing the Title VII budget during this period were Title I, P.S.E.N., Chapter 720, and supplemental tax-levy monies. Basic bilingual projects functioned throughout the decade offering: English as a second language (E.S.L.) instruction; an array of native

language courses ranging from remedial and elementary to advanced structure and literature; and a variety of courses in social studies, science, and mathematics taught almost exclusively in Spanish. Content-area courses were divided into academic (A) and general (G) tracks. The non-instructional component included a particularly strong core of supportive services, including guidance, program and college advisement, and informal consultation with program staff.

Administration of this program, one of the city's largest bilingual projects, has proven to be a formidable task, particularly in the context of recent personnel shifts. The staff consists of 41 persons, including Title VII staff and educational assistants. Affecting coordination of this large group was a split teaching schedule, which made regular meetings of the entire staff infeasible. Mid-year staff changes, the pressures of generating a new program while operating and documenting the current project, uncertainty in the face of budget cuts about the future of the program and of individual staff assignments, and occasionally tense relations between the mainstream faculty and the bilingual staff, resulted in administrative problems in 1980-81.

The final evaluation report for 1979-80 elaborated on the program's setting in the community and the school, on student characteristics, supportive services, and content-area offerings. It provided a reasonably comprehensive view of the program's operation, and concluded that the project at Brandeis has maintained, in its second year of the funding cycle, the superlative level of achievement which has characterized the Brandeis program since its inception. It noted that this achievement

has been attained in the context of administrative instability: since 1977 the program has functioned under the direction of an acting assistant principal.

The present report will not dwell on aspects of the project which were fully documented in last year's narrative and which remain substantially intact. It will incorporate data from the newly devised student background questionnaire and the data capture form generated by the Office of Educational Evaluation (O.E.E.); it will emphasize areas in which particular stress was laid during the year, such as staff development; and it will articulate problems encountered in terms of program administration and faculty relations with a view toward providing information to bilingual staff at Brandeis which hopefully will be useful for program improvement.

I. CONTEXT

When Brandeis High School was designated a site for a Title VII program in 1972, selection was based on demonstrated need in an area which served as port-of-entry for immigrants from the Caribbean, Central America, and South America. The target population was originally evenly divided between Haitian and Hispanic students: in the subsequent decade, the Haitian population moved to Brooklyn, settling in communities which had attracted concentrations of Haitian immigrants. But Manhattan's west side has continued to draw Hispanic immigrants; the influx has reflected the economic and political conditions, as well as natural disasters, which have occurred in the students' countries of origin.

At the same time, there has been a trend toward more Asian-Americans settling in the area. The project director speculated that by the mid-eighties, Brandeis may have a significant population of Asian-American students.

While the school's immediate setting is a rapidly changing neighborhood undergoing systematic "gentrification," Brandeis students generally commute from less affluent communities. The sprawling attendance area describes a corridor through the borough stretching from 155th Street to the Battery; it covers much of Manhattan's west side as well as portions of the east side. Brandeis draws students from several feeder schools, including Junior High Schools 54, 118, 52, 143, 164, and 43.

The school's immediate vicinity was described in some detail in last year's report. It offers numerous educational and social service resources. The American Museum of Natural History and the Hayden Planetarium are a ten-minute walk from the school.

Since the funding proposal was submitted in the 1977-78 school year, the school's enrollment has diminished by nearly 25 percent, dropping from 4,255 to 3,334. At the same time, the number of Hispanic students enrolled at Brandeis has increased from 1,927 (45 percent of the total population) to 2,128 (64 percent). In each year of the funding cycle, approximately half of the Hispanic population was designated LEP (of limited English proficiency).

Brandeis is a large, well equipped school. In view of its decline in enrollment, it presumably has adequate facilities to accommodate its students. Bilingual teachers commented, however, that too few rooms had been assigned to the program. Program students account for a quarter of the school's total enrollment, but the program is not allotted a proportionate number of available classrooms. While most mainstream teachers are assigned to a single room in which they teach throughout the day, program teachers typically work in two or three rooms, carrying materials and equipment (overhead projectors or exhibits, for example) from room to room, from floor to floor.

II. STUDENT CHARACTERISTICS

SOURCES

Last year's report outlined characteristics of program students, based on interviews with the acting assistant principal and the head grade advisor. The views of several program teachers were also incorporated into the account. The discussions highlighted the following facts. The great majority of program students are foreign-born. Many are recent arrivals; others have been in the United States for a year or more and have entered from feeder schools in Harlem, El Barrio, the far upper east side, Manhattan Valley, and the lower west side -- areas of Manhattan which are largely Hispanic and black. Most have come to New York with one parent or other relative. Others have been sent to live with relatives who emigrated previously. While some have come to seek education and economic opportunity, others left their countries due to political strife or natural disaster. The head grade advisor stressed that the extended family network common to students' cultures has helped them to negotiate the extremely difficult transition.

Students who enter the program on arrival from the native country have a wide range of skills in Spanish and various levels of preparedness in the content areas. Typically they have had from four to eight years of schooling, which has not alway been continuous. Those who enter Brandeis from feeder schools frequently have more difficulty in adapting to the program than those who come directly from abroad.

To these generalizations might be added the following data, gathered by means of instruments devised by the Office of Educational

Evaluation, including the data capture form and the student background questionnaire.

COUNTRIES OF ORIGIN

The data capture forms submitted for 766 students indicated that fully two-thirds of program students were born in the Dominican Republic. Six percent were born in Puerto Rico; two percent were born in the continental United States. Table 1 presents a breakdown of bilingual program students by country of origin.

Of students who completed student background questionnaires, 77 percent had been in the U.S. no more than three years. A total of 92 percent had been in the U.S. no more than five years.

EDUCATION IN COUNTRIES OF ORIGIN

More than half the participants had completed seven or more years of schooling outside of the U.S., according to questionnaire responses. Of students who attended school outside the U.S., 85 percent had attended no more than three schools. Seventy-two percent had not studied English before immigrating to the U.S.; only ten percent had studied English for more than two years.

HOME LIFE

Asked with whom they live, students responded as follows:

With both parents	39%
With father	9%
With mother	44%
Other	8%

The number of students living with both parents falls somewhat in the middle of the range for Spanish-dominant participants of Title VII programs

who completed O.E.E. student background questionnaires. For example, at one school serving Hispanic students, 29 percent reported that they lived with both parents; at another, the figure was 61 percent.

Table 1. Number of program students by country of birth.

COUNTRY OF BIRTH	NUMBER
Dominican Republic	511
Ecuador	81
Puerto Rico	47
El Salvador	32
Colombia	23
United States	16
Cuba	10
Nicaragua	10
Honduras	9
Guatemala	8
Mexico	8
Costa Rica	3
Peru	3
Argentina	1
Bolivia	1
Chile	1
Haiti	1
Panama	1
TOTAL	766

LINGUISTIC CHARACTERISTICS

Students who answered the questionnaire reported on language usage in various settings and situations. The following values were obtained for students using Spanish all or most of the time:

At home, receptive	83%
At home, expressive	79%
In the neighborhood	41%
With friends	51%
At work (for those holding part-time jobs)	40%

While Spanish remains the dominant home language, half the students use English at least some of the time with friends, and more than half use English in their neighborhoods. Of those who work, more than half use English on the job.

In addition, 70 percent reported that they read in English at least some of the time, and 85 percent reported using English for televison or radio reception at least some of the time.

In general, responses to the questionnaire indicated greater diversity in patterns of language usage than is often posited for New York's Hispanic immigrants.

AGE

Table 2 displays information collected on the data capture form about age of students. The data in the table indicate the following facts:

Approximately three-quarters of program students were overage for their grade;

Approximately 20 percent of program students were 19 or older in the spring term; half were 18 or older;

Approximately 30 percent of program students were 18 or older in the spring term.

The questionnaires suggest that typical program students are overage for their grade (half of all program students are 18 years or older), and living with a single parent. The pressures on students to enter the work force, to drop out of school or attend irregularly, are therefore enormous. Drop-out and attendance rates might best be considered in this context.

Table 2. The age by grade of program students.*

AGE	GRADE 9	GRADE 10	GRADE 11	GRADE 12	TOTAL
13	2	0	0	0	2
14	5	0	0	0	5
15	27	11	2	0	40
16	63	66	7	0	136
17	65	99	45	3	212
18	51	59	86	7	203
19	15	20	61	20	116
20	5	11	27	13	56
21	1	4	7	5	17
22	0	0	0	1	1
TOTAL	234	270	235	49	788
% over-age for grade	86	72	77	80	78

*Shaded boxes indicate the expected age for each grade level.

SEX

Because there may be selective personal and environmental pressures on students in urban communities, the composition of the student body may vary from school to school and grade to grade within a school.

Table 3 presents the distribution of bilingual students by grade and sex. The figures indicate that boys outnumber girls in the ninth grade. In grades ten, eleven, and twelve, however, girls outnumbers boys in a pattern which generally increases from grade ten to twelve, suggesting that more boys leave the program and/or school than girls do. In grade nine, boys comprise 59 percent of the population, and girls comprise 41 percent. By grade twelve, girls constitute over 72 percent of the students served.

The percentage of program students is highest in the tenth grade and lowest in the twelfth grade. The percentages of male and female students are roughly equivalent in the tenth grade.

Table 3. Number and percentages of students by sex and grade. (N=806)

	SEX					
GRADE	MALE N	percent of grade	FEMALE N	percent of grade	TOTAL N	column total: percent of all students
9	139	59	97	41	236	29
10	133	49	139	51	272	34
11	106	43	138	57	244	30
12	15	28	39	72	54	7
TOTAL	393	49	413	51	806	100

III. PROGRAM DESCRIPTION

BACKGROUND

The program at Brandeis High School is New York City's largest single-site bilingual project in terms of the number of students served (approximately 800) and the size of its staff (41). The three-year Title VII project completed in 1980-81 succeeded a five-year program initiated in 1972. In almost a decade of Title VII-funded bilingual education at Brandeis, the program has generated extensive curricular materials, and has developed a cadre of experienced bilingual specialists, classroom teachers, and paraprofessionals. During its first five years, the project was directed by one person who shaped the program's goals and guided its implementation. The administration of the program during the current funding cycle has been less consistent, with frequent staff rotations in key positions. The history of the program was detailed in last year's report; the following sections carry that history through 1981.

The project encompasses an array of courses, geared to "general" and "academic" students, in English and Spanish language, as well as in social studies, science, and mathematics. The non-instructional component encompasses curriculum development, staff development, parental and community involvement, and a variety of supportive services.

ORGANIZATION

The bilingual program functions as part of the school's department of foreign languages and bilingual education. Since 1977, the department has operated under the supervision of an assistant principal (A.P.), who was supported by tax-levy funds. Since 1979, that position has been held

by an acting assistant principal. The acting A.P. assumed responsibility for overall program implementation, including coordination of the large bilingual staff: he concentrated particularly on staff development and classroom supervision.

The department encompassed the Title VII staff, including the project director who was responsible for such day-to-day operations as record-keeping, documentation, budgetary matters, and grant development. In addition to 12 non-instructional staff, the bilingual project encompassed a staff of 41 teachers and 13 paraprofessionals divided roughly in half into two working schedules: periods one through eight and periods two through nine. When the acting A.P. held monthly department meetings, he accommodated the staff by scheduling two separate meetings, one during the first period of the day and one during the last, the entire department rarely had the opportunity to meet together.

In order to meet the needs of the large staff, and at the same time to tap fully the capabilities of individual staff members, the acting A.P. introduced the concept of subject-area coordinators, which is discussed in the section on staff development.

FUNDING

Tables 4 and 5 outline the funding sources of the instructional and non-instructional components.

Table 4. Funding of the instructional component.

SUBJECT	FUNDING SOURCES	NO. TEACHERS	NO. PARAS
E.S.L.	Title I	6	5
	P.S.E.N.	3	
	Tax levy	10	
Native language	Chapter 720	5	3
	Tax levy	5	
Mathematics	Chapter 720	1	→ 5
	203-204	2	
	Tax levy	2	
Social Studies	203-204	1	
	Tax levy	2	
Science	203-204	2	
	Tax levy	2.3	

Table 5. Funding of the non-instructional component.

AREA	FUNDING SOURCES	STAFF
Administration & Supervision	Tax levy	1 Department chairperson
	Title VII	1 Project director
Curriculum Development	Tax levy	1 Curriculum specialist (2/3 position)
Supportive Services	Tax levy	5 Bilingual grade advisors
		2 Bilingual deans of discipline
	Title VII	1 Testing and evaluation coordinator
	Title VII	1 College and vocational advisor
Staff Development	--	--
Parental and Community Involvement	--	--

ADMINISTRATIVE ISSUES

The ordinary and anticipated difficulties of running so large a program were in 1980-81 aggravated by problems which arose in the fall. In the first place, staff assignments were not solidified until the second day of the school year. The principal informed the individuals who had, the previous year, served as acting A.P. and project director, and who had assumed they would hold the same positions in 1980-81, that they would be switching jobs due to a technicality (prohibiting faculty members from retaining acting positions for more than one year). The practical tasks of switching offices, desks, and files, and briefing each other on details of their jobs, cut into valuable administrative time during the crucial first week of classes. Also, since both individuals had applied for the permanent A.P. position, which was to be filled at the end of the school year, some tension was unavoidable.

Other difficulties affected program implementation. The enforcement of the New York State immunization law, requiring exclusion of students who had not been properly vaccinated, created additional confusion. The bulk of the paperwork was handled by a health officer, but the process hampered the work of official class and content-area teachers.

A number of additional staff changes occurred during the year. In the fall, a teacher who had been excessed out-of-order at another school returned to his original assignment after a grievance process. The Title VII testing and evaluation coordinator left mid-year to take a position at the school system's central offices. Illness and maternity leave caused two additional teachers to leave during the year. Unable to locate a substitute for the bilingual science teacher, the project

director herself assumed her classroom responsibilities during part of the spring term.

In the midst of these disruptions, the program entered the final year of its funding cycle. The project director worked with the testing and evaluation coordinator to develop a grant for a future project. In light of federal budget cuts, the acting A.P. and project director devoted considerable time to planning how bilingual students might best be served during the coming year in the absence of Title VII funds. This issue particularly occupied the acting A.P., who drafted a lengthy report to the principal outlining his proposal for compensatory-time positions in 1981-82.

All of these problems diverted time and energy from implementation of the program itself. Since the project at Brandeis was a mature program, with well established routines and procedures, day-to-day program operation continued, but at some cost to staff morale and to the effectiveness of their efforts.

FACULTY RELATIONS

A monthly schoolwide faculty meeting attended by the evaluator focused on the bilingual program. The goal of the meeting was to acquaint the faculty with the program's work, and to promote closer ties between the bilingual staff and the mainstream faculty.

The principal introduced the session by noting the excellent attendance rates and high motivation of bilingual students. He reported that students in classes he had observed were behaved and very much

interested: "I find an excellent spirit in the classroom." He expressed one major reservation: "Youngsters may be staying there too long." But on the whole, he termed the program "tremendously effective." He also remarked that the current political context seems precarious for bilingual programs in general.

The acting A.P. then took the floor, stating that this presentation was a continuation of the meeting on bilingual education held in March. He introduced the day's speakers: the testing and evaluation coordinator, the college advisor, and the head bilingual grade advisor.

Their brief presentations contrasted the needs of bilingual program participants with those of other Brandeis students. A question-and-answer session which followed dealt primarily with the issue of maintenance. In some instances, the questions seemed to be either uninformed or provocative: "Is one of the goals to have students fluent in English?" one faculty member asked. Another wondered whether students are re-evaluated each year. The strongest statement was made by a veteran faculty member, who said:

> There are students who have been in bilingual programs for eight years. This teacher, for one, wants immersion in English. At some point these students must "sink or swim." Most are at such a low percentile in the native language that they need remedial work in the first language. Should they not be immersed in English? If they are really limited in either language, shouldn't all their school time be spent in English?

The principal responded by saying, "These are some of the issues that concern us." He offered the following comment: "Sometimes in a bilingual class, a teacher who can't get the point across in Spanish introduces a

little English." He added that he has occasionally spoken to a bilingual student who has responded in "perfect English." With this the session ended.

The acting A.P. and the project director were asked about their reactions to this meeting, and specifically to the apparent reservations about the program which were expressed by the principal and members of the mainstream faculty. The acting A.P. stressed that the purpose of the presentation was to communicate with the staff at large, which may sometimes view the bilingual staff as interlopers. He felt that it was time for the issues to be opened up, and that a combination of pride and defensiveness had in the past sometimes isolated the program staff. He hoped that his role, as a non-Hispanic acting A.P., had helped to dispel the image of program staff as a closed group, and to strengthen ties with the rest of the faculty. He added that the professional attitude and individual strengths of program staff had helped to enhance the department's image.

The acting A.P. stressed the importance of continued efforts to open communication, and to share with the faculty as a whole information about the program's activities. In particular, he said that the Title VII proposal and related documents should not be a "state secret," but should be available in the school library. In addition, job descriptions of Title VII positions might be publicized; since these descriptions are extensive, they would dispel the illusion that those filling these non-classroom assignments are "getting away with murder."

The project director seemed somewhat discouraged that after so many years of excellent work, documented by positive evaluation, the program still elicited uninformed negative responses from some mainstream faculty. She noted that the change in the general political climate has indeed affected the position of the program within the school. She had attempted to compile statistics documenting the actual length of time that program students had spent in bilingual classrooms; this compilation proved difficult, since it is often impossible to determine from a student's junior high school record whether he was actually in a bilingual program, or of what the program might have consisted. Her survey concluded that relatively few had been in bilingual programs for five years or more.

She mentioned that better program-school relations might be promoted if teachers in various departments had a clearer idea of what was going on in the school at large, and felt that a better flow of information among all staff would improve the situation.

Interviews with program teachers suggested limited support from the mainstream faculty. A bilingual grade advisor reported that the assistant principal for guidance requires that English be spoken with advisees. In practice, however, language use reflects the needs of each individual student when he or she seeks counseling or advisement. The bilingual teachers added that attitudes toward the program had improved informally as bilingual and monolingual teachers got to know one another.

A math teacher reported that he had problems getting help from the math chairperson, and suggested that there may be some competitiveness with the bilingual program. He mentioned, in particular, that if the bilingual program develops a trigonometry offering, it would have a complete array of mathematics courses which would "compete all the way" with mainstream offerings. He added that approximately half the students taking trigonometry, the most advanced math course offered at Brandeis, started in a bilingual program math class.

The math teacher stated that there has been little coordination with the mainstream: he heard about what was happening in the parallel mainstream course mainly when students who had been in his class before mainstreaming returned to visit him and reported informally on what they were doing in their math classes.

IV. INSTRUCTIONAL COMPONENT

ENGLISH AS A SECOND LANGUAGE

The bilingual program offered a three-year E.S.L. program of courses which met for two periods each day: the approximately 730 students enrolled in those courses took a third period of reading designed to complement the language instruction.

The fourth semester of E.S.L. is a transitional course devoted to advanced structure. Because many students were finding it difficult to go from the third to the fourth semester, a stepping-stone course was introduced. Designated E.S.L. 4, this course was designed to reinforce basic skills, and was geared to those students who had passed the first three semesters with poor grades, or those who had failed E.S.L. 3 but who, in the teacher's judgement, would profit more from a systematic review than from repeating the same course. (E.S.L. 4 was not offered in the spring semester.) The actual fourth-semester course was designated 5 T (transitional), and was followed by 6 T. Both 5 T and 6 T were offered for either academic-track (T.A.) or general-track (T.G.) students; there were twice as many students in the academic than in the general track. The 5 T courses met for two periods per day; 6 T courses met for one. A description of spring semester English-language courses is provided in Table 6.

The program also offers a course designated E.P.T. (English pre-transitional), which was given in the fall but not the spring. This course is geared to English-dominant bilingual students who need work

in basic skills; they generally enter mainstream English courses or 6 T or mainstream English courses after completing E.P.T.

Table 6. Instruction in English language.

COURSE	NUMBER CLASSES	AVERAGE REG.	PERIODS/ WEEK	DESCRIPTION
E.S.L. 1	3	28	10	Beginning structure-Pt. 1
E.S.L.R. 1	2	34	5	Complementary reading to E.S.L. 1
E.S.L. 2	7	24	10	Beginning structure-Pt. 2
E.S.L.R. 2	5	23	5	Complementary reading to E.S.L. 2
E.S.L. 3	7	24	10	Intermediate structure
E.S.L.R. 3	4	30	5	Complementary reading to E.S.L. 3
5 T.A.	5	25	10	Advanced structure-Pt. 1-A
5 T.G.	2	22	10	Advanced structure-Pt. 1-G
6 T.A	3	28	5	Advanced structure-Pt. 2-A
6 T.G.	2	30	5	Advanced structure-Pt. 2-G

In 1980-81 the program stressed writing skills. The principal had urged that students in all Brandeis English classes be required to write on a regular basis. He established a minimum of five compositions per term, to be corrected by the teacher and recopied by the student. These compositions were collected at the end of the term by department heads; the principal then examined four or five from each class to monitor students' progress.

The teacher in a fifth-semester transitional English class, observed by the evaluator, said that she had urged content-area teachers to incorporate writing skills into their courses, in part to ensure that students are prepared for the competency test in writing. She expressed her conviction that language study -- in either language -- promotes logical reasoning, and helps students to learn. She said that it is vital to teach concepts and their application, not to use rote, and that students are fully able to grasp such concepts as reported speech, clauses, or passive construction. Motivation is high, she added, when students feel that they can apply a newly learned concept. She said that this process keeps her interested in the work, and that after years of teaching she "can't wait to get to school in the morning."

Her class was composed primarily of tenth and eleventh graders, with a few seniors. Most had been in the United States for about two years. The class met for two periods; during one period, an educational assistant helped with clerical matters and worked with students on an individual basis. Asked whether the paraprofessional help was useful, the teacher responded that in fact the educational assistant had, in her individual work with students, "taught five kids to read."

The observed lesson involved constructing logical conclusions in English; for example, "He was carrying an umbrella when he came: it must have been raining." Students were attentive, without exception. Although the project director had notified neither the teacher nor the students of the evaluator's visit to the classroom, the materials seemed sufficiently absorbing that the lesson proceeded without undue distraction.

The English-dominant teacher, who had lived in a Spanish-speaking country for some time, did not hesitate to use Spanish to point out a construction which was analogous to that being learned in English. She used the sentence, "The bell was rung on time yesterday," in English and Spanish, to emphasize the passive construction.

The teacher showed the evaluator the composition folders she maintained for all students, as the principal had required, and the texts used by the class: Wordly Wise, Let's Write English, and Steps to Composition. She mentioned that duplicating teacher-made materials had been a problem, in part due to paper shortages in the department. She has had to pass out materials, ask students to recopy them into their books, and then re-collect them. "Copying isn't bad for the kids," she remarked, but nevertheless felt that she could not use as many xerox materials as she would have liked to for practice.

The evaluator also observed a beginning-level E.S.L. class. The day's work began with a "do-now" exercise, which was on the board when students entered. Work focused on the use of contractions and pronouns. After the "do-now," students were given paper of different colors, and followed instructions in English to fold this paper into small boats. Students were then asked to construct such sentences as: "Her boat is blue." "Your boat isn't blue." "Your boat is red."

NATIVE LANGUAGE INSTRUCTION

About 450 students were enrolled in eight levels of Spanish-language courses. Twenty students were placed in a remedial course

designed to reinforce basic skills; these students also enrolled in the elementary-level Spanish courses, and therefore took two periods of Spanish language per day.

The first and second semesters of Spanish were essentially remedial, emphasizig reading and writing skills. The second, third, and fourth years focused on literature in Spanish. Table 7 outlines instruction in the Spanish language geared to program students.

CONTENT-AREA COURSES

Overview

The program offered four social studies courses, five mathematics courses, and two science courses. Most of these were two- or three-semester courses; some were offered for a single term during 1980-81. Most content-area courses were offered either to general-track (G) or academic-track (A) students. Because the A courses were geared to citywide or regents examinations, a few students have asked to enter general-track classes; if teachers and grade advisors considered that student able to do academic-track work, the request was not honored.

A total of five paraprofessionals were involved in content-area instruction, assisting teachers with clerical tasks and in the classroom.

A special feature of the Brandeis program, stressed in the 1979-80 evaluation report, has been the number and variety of content-area offerings. In speaking with the evaluator, the school's principal noted a trend toward less diversification in the program's course offerings. He added that in view of budget cuts, "singleton courses,"

those for which registration warrants only one section, are less feasible than in the past. Table 8 outlines bilingual instruction in the content areas.

Table 7. Instruction in Spanish language.

COURSE	NUMBER OF CLASSES	AVERAGE REGISTER	DESCRIPTION
N.L.A.X.	1	20	Remedial basic skills, taken in conjunction with SIS; pro.-devel.
S1S	2	30	Remedial reading skills, individualized
S2S	2	32	Remedial writing skills, individualized
S3S	3	34	Level II-literature
S4S	4	34	Level II-literature
S5S	1	34	Level III-literature; NYS syllabus
S6S	2	34	Level III-literature; NYS syllabus
S7S	1	10	Level IV-literature; prog.-developed
S8S	1	10	Level IV-literature; prog.-developed

By multiplying the average register per class by the number of classes, one may arrive at the following approximations of enrollment in each content area:

Bilingual social studies	650
Bilingual math	675
Bilingual science	450

Table 8. Bilingual instruction in content areas.

COURSE	No. CLASSES	AV. REGISTER	MATERIALS CORRESPOND TO MAINSTREAM?	COMMENT
World geography	3	35	50%	
World history I-A	3	34	yes	
World history I-G	4	34	yes	
World history II-A	2	34	yes	
World history II-G	1	27	yes	
Amer. history I-A	2	38	yes	
Amer. history II-G	1	34	yes	
Economics I-A	2	34	yes	
Economics I-G	1	30	yes	
Remedial math	2	30	no	More refined than mainstream course
General math 1 (Rem.)	4	34	no	
General math 2 (Rem.)	4	34	no	
Transitional academic math	3	34	no	Preparatory for R.C.T. exam and algebra course
Algebra 1 (9MA)	2	36	yes	
Algebra 2 (9MB)	2	30	yes	5% of materials in English
Algebra 3 (9MC)	2	28	yes	10% of materials in English
Geometry 2 (10MA)	1	28	yes	10% of materials in English
Geometry 2 (10MB)	1	25	yes	10% of materials in English
General science 1-A	2	36	no	
Gneral science 2-A	1	34	no	
General science 2-G	3	36	no	
Biology 1-A	2	38	yes	
Biology 1-G	2	24	yes	
Biology 2-A	2	30	yes	Text in Eng., class in Spanish
Biology 2-G	2	25	yes	

The evaluation report for 1979-80 provided an overview of the content-area courses offered by the Brandeis program. This report will therefore focus only on mathematics.

Mathematics

Students were given considerable individual attention in a remedial math class observed by the evaluator. While the class worked on problems in their notebooks, the teacher helped six students who were clustered at his desk. Students standing by the desk listened attentively as the teacher helped individual students. Then he went over the problems with the class on the blackboard. The key to the class seemed to be the teacher's rigorous pace.

The evaluator visited a second-semester geometry class, at which 11 students were taking a test. The evaluator spent the period interviewing the teacher, who described the basic math curriculum. The students who take general math vary in ability, he said. Some have been in this country for some time and can speak some English. The fluid curriculum is adapted to meet state requirements. He emphasized that the broad range of ability and attitude make general math a difficult course to teach. Some students who are misplaced are transferred to an algebra course. Others are capable but cannot seem to concentrate. Still others are negative in their attitudes toward math, and are convinced that they cannot perform. Those who have had a very weak educational background in the native country, or who have passed the previous course with a score of 65, have the most difficulty.

The text in general math which has English and Spanish on facing pages, also presents difficulties.* There are neither enough word problems in the text, nor enough of the same type of problem. The book tends to have one example of each kind of word problem; teachers must therefore supplement the text with their own materials, but reproducing these materials may be problematic. In addition, the text is too limited in scope; because it does not cover graphing, pre-algebra, and other areas tested by the R.C.T., the teacher must generate his or her own materials for anything beyond the study of percents.

Algebra is taught in three semesters, labeled A, B, and C; the staff adapts the text to incorporate material which is likely to be on the Regents exam.** English vocabulary is introduced for whatever terms differ from the Spanish. In general, algebra seemed to pose fewer difficulties for teachers and students than the general math course.

Students sometimes experience awkwardness in adjusting to the American approach to studying mathematics; in their native countries they were more likely to learn by rote, and to have some algebraic and geometric concepts incorporated into general math classes. They generally have not encountered many word problems in any language. They also have some specific difficulties; for example, since division problems are set up, written out, and solved differently in Latin American countries than in the U.S., students become easily frustrated when in algebra classes they are confronted with division of polynomials. They must apply unfamiliar procedures to new material.

*Stein, Repaso matematico/Mathematics Review.
**Dressler, Algebra I.

The eleventh- and twelfth-grade students who take geometry can read enough English to understand the verbal problems in English. Students may take the first two semesters of geometry in the program; the final semester is given only in the mainstream. Geometry classes have been small: there were 25 students in the first semester, and 13 in the second. The second class was half the size of the first since some students failed the course; others moved to mainstream geometry after the first semester. The teacher said that he pushes them to move faster than the mainstream course. He wants them to be ahead of the mainstream class that they will join in the second or third semester so that they will have time to adjust to English-language instruction. He added that because geometry requires considerable verbal dexterity, he would prefer to have trigonometry rather than third-semester geometry be the first mainstream math course taken by program students.

V. NON-INSTRUCTIONAL COMPONENT

CURRICULUM DEVELOPMENT

Responsibility for assessing and addressing needs in this area rested with a curriculum specialist, who devoted one-third of his time to classroom teaching and two-thirds to acquiring, adapting, or developing materials for the biligual program. He commented that locating Spanish-language texts appropriate to students' level of knowledge or sophistication has been an ongoing problem in all content areas, but particularly in social studies. He noted that it is possible to purchase social studies texts which are serviceable translations from English to Spanish, or which are adequate in terms of cultural orientation, but it is difficult to find books which meet both needs. An additional problem has been the resistance of many of the city's bilingual programs to sharing materials which they have developed or acquired.

When a suitable text cannot be located, the curriculum specialist or classroom teacher develops guided reading selections. In some cases, the area coordinator -- a more experienced teacher who advises other teachers on a volunteer basis -- may help with acquisition or development of materials. (See discussion of staff development, below.)

Commercial book companies are queried on a regular basis as to new materials which might be appropriate for program students. Representatives of these companies have sometimes offered workshops to demonstrate the use of new materials. These have proven effective when the presentations were made in Spanish. For example, a useful demonstration lesson was presented in native language arts.

The program has concentrated on developing materials which cover areas not typically included in standard texts, such as the development of test-taking skills, including those needed to take and pass the R.C.T. writing exam. "We know where students fall down and what they need," the coordinator commented. "We cover the same material as is offered in the mainstream."

During 1980-81, materials were acquired or developed in several areas:

The E.S.L. curricula were reviewed, evaluated, and revised.

In the area of science a question file was created for the purpose of developing uniform examinations. A curriculum for general science 2G was prepared and was being rewritten at the time of the site visit.

In social studies, a new history textbook had been acquired. The social studies curriculum was refined, and "canned" lessons were developed which included questions and exercises. These lessons were geared to both general and academic classes, and were topically organized, so that one period might cover aspects of the U.S. Constitution, or reconstruction, or westward expansion.

A math text was introduced which uses English and Spanish on facing pages. The coordinator commented that teachers often do not use the English side of the text. For remedial math, which requires constant drill and repetition, teacher-developed materials are used exclusively. These materials were reorganized during the school year.

SUPPORIVE SERVICES

The program's five bilingual grade advisors provided supportive services which tended to be quite specialized; that is, they are geared to meet the special needs of students who may have experienced political and social upheaval, whose families may have been divided, whose education may have been disrupted. Many have spent periods out of school either due to social or economic circumstance, or due to minor illnesses, such as flu, which might in the U.S. keep them home for a week or two, but which in Latin American often results in a student's staying out of school for a term.

The first step in advisement, considered crucial to a student's subsequent success in the program, is taking a careful and complete history of the student's background. How many years of actual schooling has the student had, and in what kind of setting? At what age did he or she first enroll in a school? (Many began to attend at age seven or older.) If the student has entered the program from the feeder school in the city, it is often difficult to judge how long they have been in bilingual programs and of what such programs consist. Grade advisors try to determine what the student's junior high school experience has been.

Many program students have had limited medical care, and have special health or dental problems. All require orientation to the school and city at a pace which allows them to absorb a great deal of new information.

The head bilingual grade advisor, in her work with program students, fulfills many of the functions carried out by guidance counselors in the mainstream. She interviews students when they enter the program,

and provides crisis counseling. She makes referrals to local agencies and to other resources when a student's (or parent's) special needs cannot be addressed within the school setting. She has taken on a number of special projects, and in general seems to have more responsibility than her time allows.

The program's grade advisors also fulfill the basic advisement functions for bilingual students: assembling programs, authorizing program changes, meeting with parents, dealing with R.C.T. reports, etc.

The college advisor stated that his goal is to place graduating bilingual students in the best possible college according to individual capacity and interests. He stresses contact with parents, and tries to help them to sort out differences among various types of American institutions of higher education. He has also worked with parents to deal with the limited expectations they typically have about the continued education of their daughters, who may themselves wish to go on to college.

Other supportive services are provided by two bilingual deans and the evaluation and testing coordinator.

STAFF DEVELOPMENT

Overview

Staff development activities have been implemented through different modes over the three years of the funding period, reflecting program-determined needs and the different perspectives of the program officers assigned to the project by the funding source. A needs assessment was conducted in 1978-79, at the outset of the funding cycle. In

that year, a teacher trainer was paid by Title VII to provide assistance on-site. In 1979-80, the trainer's position was deleted in negotiations with the funding source. As a result, training was provided to staff members through participation in university courses. During the same year, however, a new Title VII program officer assigned to the project felt that insufficient teacher training and assistance was taking place. The acting assistant principal sought to remedy the situation, and during 1980-81 placed particular weight on the importance of staff development in the project.

In an interview, the acting assistant principal commented that the teachers who staff bilingual programs may be less experienced (at least in the U.S. educational system) and more in need of direction than other faculty members. Having studied and taught abroad, some have been trained to stress rote learning in the classroom; others may have absorbed "elitist" attitudes in their own education. Many need assistance in learning to involve all of the students in classroom activities. He added that the staff's resources had not previously been fully tapped, in that members of the Title VII staff who have expertise in content areas were not being called upon to assist or support less experienced colleagues. The staff development component, as implemented by the acting assistant principal, was founded on these views.

Staff Development Activities

Staff members took part in all-day workshops as part of a city-wide orientation for high school supervisors and administrators. These

workshops disseminated information on revised requirements or mandates from the Board of Education.

All bilingual faculty attended department meetings on a monthly basis. Because the staff worked on two schedules, meetings were repeated twice on the same day to accommodate everyone. Like the monthly school-wide faculty meetings, these gatherings served the purpose of circulating information and discussing methodology, and exchanging ideas about improving services to participants. "Department meeting deal with needs common to most or all staff members," the acting assistant principal commented. "Given time limitations, it is impossible to devote any single meeting to one topic or area. Administrative and instructional matters are discussed: how to distribute test questions; how to send kids to the blackboard." The agendas for several department meetings, reviewed by the evaluator, offered practical solutions to everyday problems, and were designed to assist both experienced and new teachers to meet the program's objectives; the acting assistant principal introduced the principles of management by objective at these sessions, urging the staff to set performance goals for themselves and their students.

Additional workshops included a presentation by a representative of the publishing company Barnell-Loft to introduce individual reading programs. These were offered at the insistence of the project director to assist program teachers in the use of the materials. The project director attended a three-day conference on model bilingual programs at Anaheim, California.

Memoranda

To supplement and update information reviewed at monthly departmental meetings, the acting assistant principal issued frequent memoranda to the bilingual staff. These memos stressed classroom management techniques, offering specific advice for "vitalizing learning," that is, maximizing student participation in every teaching-learning experience.

Typical memos provided checklists of classroom management principles, offered specific instructions about creating complete lessons plans, or elaborated department grading policy. One memo included, under the heading, "Some suggestions for settling the class down to work," ten ways to maintain an atmosphere conducive to work. Another memo indicated that all lesson plans were to include written work which asks students to construct sentences; it then provided suggestions for implementing this requirement. Other memos stressed positive reinforcement, giving ideas for how to let students demonstrate mastery, or offered suggestions for conducting sessions at parents' visitation, designed to guide teachers through a situation which often produces anxiety. The suggestions contained in these memos were specific without being restrictive; they were both friendly and serious in tone. One veteran teacher who described these memos said that she found something helpful in each one of them.

Area Coordinators

The acting assistant principal recruited area coordinators, identifying licensed teachers in each instructional area to whom teachers

might turn for assistance or support. (The Title I coordinator provided teacher training and advice on curriculum, testing and other matters to the E.S.L. staff.) Each of the area coordinators carried a full load of responsibilities in his or her area of assignment, but was called upon from time to time to consult with a less experienced staff member, to recommend book selection, for example or to help adapt curriculum to students' needs. The college and career advisor has expertise in science which had not been tapped by the program; the acting assistant principal asked whether he would be willing on a volunteer basis, to help the program's science teachers. The acting assistant principal stated that it is important for the Title VII staff to broaden their horizons in this way, and added that it is the assistant principal's prerogative to determine how the staff's resources might best be used to meet program goals. His system of area coordinators allowed for increased staff development on a one-to-one basis.

PARENTAL INVOLVEMENT

Contact with parents was maintained primarily by the grade advisors and the college and career advisor; the program had no family assistants or other staff designated to make home visits. The staff who offered supportive services to students were mindful of parents' needs as well. The college and career advisor stated, "You cannot take a lot for granted in helping parents. They especially need help in finding out where to get help. Familiarizing parents with the resources of the school is important." Grade advisors made referrals for parents who were in need of assistance to resolve housing, health, legal, or other problems.

The parents' advisory committee consisted of seven members; the project coordinator described three of them as "very involved -- the type that will continue to be involved even after their children graduate or leave the program." On the whole, program administrators have found it difficult to involve parents in program activities; even those on the committee came for the most part, when they were summoned, and did not initiate contact with the program. Reluctant participation may stem, in part, from the fact that most students' families live some distance from the school -- 60 or more blocks from Brandeis in many cases.

AFFECTIVE DOMAIN

Overview

Data provided by the program on attendance, graduation, class rank, and awards suggest that participants are highly motivated students with largely positive attitudes toward themselves and the school experience.

Attendance

Table 21 indicates attendance by program students, and illustrates that attendance rates of participants were significantly higher than that of the school as a whole.

Graduation and Class Rank

Data assembled by the program's evaluation/testing coordinator show that over the entire funding cycle, during each year of the funding cycle, 25 percent or more of the graduating class has been bilingual program students; in each of these classes, more than half of the top 50

students were bilingual students. The valedictorian has been a bilingual program student each year for four years.

During the four-year funding cycle, program students have earned a significant number of the following awards: U.F.T. scholarships (half or more or all scholarships awarded to graduates), Governor's Committee on Scholarship, Merit Scholarship, and Attendance and Punctuality Gold Medals. The proportion of graduating program students winning each of these awards has been substantially higher than the proportion of program students in the graduating class.

Program students have also been well represented in Arista, the honor society.

VI. FINDINGS

ASSESSMENT PROCEDURES, INSTRUMENTS, AND FINDINGS

The following section presents the assessment instruments and procedures, and the results of the testing to evaluate student achievement in 1980-1981.

Students were assessed in English language development, growth in their mastery of their native language, mathematics, social studies, and science. The following are the areas assessed and the instruments used:

English as a second language -- CREST (Criterion Referenced English Syntax Test, Levels I, II, III)

English fluency -- New York City Language Fluency Scale

Reading in Spanish -- Interamerican Series, Prueba de Lectura (Total Reading, Level 3, Forms CE, DE)

Mathematics performance -- Metropolitan Achievement Test (Advanced Level, Form F)

Mathematics performance -- Teacher-made tests

Science performance -- Teacher-made tests

Social studies performance -- Teacher-made tests

Native language arts performance -- Teacher-made tests

Attendance -- School and program records

The following analyses were performed:

1) On pre/post standardized tests of Spanish reading achievement and mathematics achievement statistical and educational significance are reported:

Statistical significance was determined through the application of the correlated t-test model. This statistical analysis demonstrates

whether the difference between pre-test and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant. This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of test norms for this population, and the unavailability of an appropriate comparison group.

Educational significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen[1].

An effect size for the correlated t-test model is an estimate of the difference between pre-test and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule of thumb, the following effect size indices are recommended by Cohen as guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = small ES

a difference of 1/2 = .50 = medium ES

a difference of 4/5 = .80 = large ES

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[1] Jacob Cohen. Statistical Power Analysis for the Behavioral Sciences (Revised Edition). New York: Academic Press, 1977 Chapter 2.

2) The instrument used to measure growth in English language was the Criterion Referenced English Syntax Test (CREST), which tests mastery of specific skills at three levels. Material at the beginning and intermediate levels of the CREST is broken down into 25 objectives per level, such as present-tense forms of the verb "to be" (Level I), or possessive adjectives and pronouns (Level II). Material at the advanced level (Level III) is organized into 15 objectives, such as reflexive pronouns. At each level, students are asked to complete four multiple-choice items for each objective. An item consists of a sentence frame for which the student must supply a word or phrase chosen from four possibilities. Mastery of a skill objective is determined by a student's ability to answer at least three out of four items correctly.

This report provides information on the average number of objectives mastered, and the average number of objectives mastered per month of treatment. Information is also provided on students' performance at the various test levels.

Mastery rates are reported by semester. Instruction (treatment) time is defined as the period of classroom instruction that occurred between pre- and post-testing which is conducted each semester. The maximum treatment time, as defined, is 62 days for fall and 63 days for spring or 3.2 months (assuming that 20 days comprise one month, on the average).

3) The results of the criterion referenced tests in mathematics, social studies, science, and native language arts are reported in terms of the number and percent of students passing teacher-developed tests. Results

are reported by grade level and the language of instruction. Data on the achievement of mainstream students in content-area classes were not available. As a result no comparisons will be made.

4) Information is provided on the attendance rate of students participating in the bilingual program compared with that of the total school population.

5) English language fluency is also evaluated with the New York City Fluency Scale. Receptive Language Fluency is rated by E.S.L. teachers from a high of 1 to a low of 6, and Expressive Language Fluency is rated from a high of A to a low of F.

A tabulation is made of how many students improved in rank by grade and comparisons are made with the criterion objectives on the proposal: 60 percent of groups rated E, F, 5, or 6 and 40 percent of groups rated D or 4 will improve one rank in both receptive and expressive modes.

The following pages present student achievement in tabular form.

Table 9. Results of the Criterion Referenced English Syntax Test (CREST): number of objectives mastered and objectives mastered per month.

(E.S.L. Title I Spanish-speaking students, fall)

GRADE	# OF STUDENTS	AVERAGE NUMBER OF OBJECTIVES MASTERED PRE	POST	OBJECTIVES MASTERED *	AVERAGE MONTHS OF TREATMENT	OBJECTIVES MASTERED PER MONTH
9	164	9.7	14.1	4.4	2.7	1.63
10	195	11.2	16.4	5.2	2.8	1.86
11	141	11.3	15.5	4.2	2.9	1.45
12	11	9.2	12.4	3.2	2.8	1.14
TOTALS	511	10.7	15.3	4.6	2.8	1.64

* Post-test minus pre-test.

- Students in grades 9 through 12 mastered an average of 4.6 objectives during the fall instructional months resulting in 1.64 objectives mastered per month.

- Mastery rates at each grade were comparable and ranged from 1.14 objectives per month to 1.86 objectives per month. The apparently lower performance by the twelfth-grade students was equivalent to that in the other grades since 91 percent of these students were tested with Level III which has 15, not 25 objectives.

Table 10. Performance of students tested on the Criterion Referenced English Syntax Test (CREST): average number of objectives mastered by grade and test level.

(E.S.L. Title I Spanish-speaking students, fall)

	LEVEL I				LEVEL II				LEVEL III			
GRADE	N	AVERAGE NUMBER OF OBJECTIVES MASTERED PRE	POST	GAIN*	N	AVERAGE NUMBER OF OBJECTIVES MASTERED PRE	POST	GAIN*	N	AVERAGE NUMBER OF OBJECTIVES MASTERED PRE	POST	GAIN*
9	102	7.3	12.2	4.9	46	14.3	18.6	4.3	16	11.4	13.4	2.0
10	71	10.3	16.0	5.7	89	12.1	18.0	5.9	35	10.5	13.0	2.5
11	16	13.9	19.4	5.5	67	11.9	17.3	5.4	58	9.8	12.2	2.4
12					1	9.0	13.0	4.0	10	9.2	12.3	3.1
TOTALS	189	9.0	14.2	5.2	203	12.5	17.9	5.4	119	10.2	12.6	2.4

NOTE: number of objectives for each level: Level I (25), Level II (25), Level III (15).

* Post-test minus pre-test.

. Level I students gained 5.2 objectives, Level II students gained 5.4 objectives, and Level III students gained 2.4 objectives.

. Level II gains were greater than Level I gains even though the pre-test scores were higher.

. While Level III gains were lowest, the pre-test score which averaged 10.2 (68 percent of the maximum score) created a ceiling effect when compared to the Level II pre-test average of 12.5 (50 percent of maximum) and the Level I pre-test average of 9 (36 percent of maximum).

. Level III post-test average of 12.6 (84 percent of maximum) was the highest post-test mastery. Level II post-test average of 17.9 was 72 percent of maximum and Level I post-test score was 57 percent of maximum.

Table 11. Results of the Criterion Referenced English Syntax Test (CREST): number of objectives mastered and objectives mastered per month.

(E.S.L. Title I Spanish-speaking students, spring)

GRADE	# OF STUDENTS	AVERAGE NUMBER OF OBJECTIVES MASTERED PRE	POST	OBJECTIVES MASTERED *	AVERAGE MONTHS OF TREATMENT	OBJECTIVES MASTERED PER MONTH
9	136	8.7	13.4	4.7	2.9	1.62
10	172	10.2	14.4	4.2	2.8	1.50
11	93	9.4	13.8	4.4	2.8	1.57
TOTALS	401	9.5	13.9	4.4	2.8	1.57

* Post-test minus pre-test.

- Students in grades 9 through 12 mastered an average of 4.4 objectives during the spring resulting in 1.57 objectives mastered per month, a slight decrease from the fall.

- The proportion of students tested at Level III increased from the fall (33 percent) to the spring (34 percent). The decrease in the number of objectives mastered per month is partly due to this change since Level III has fewer objectives (15) than Levels I and II (25).

Table 12. Performance of students tested on the Criterion Referenced English Syntax Test (CREST): average number of objectives mastered by grade and test level.

(E.S.L. Title I Spanish-speaking students, spring)

	LEVEL I				LEVEL II				LEVEL III			
		AVERAGE NUMBER OF OBJECTIVES MASTERED				AVERAGE NUMBER OF OBJECTIVES MASTERED				AVERAGE NUMBER OF OBJECTIVES MASTERED		
GRADE	N	PRE	POST	GAIN*	N	PRE	POST	GAIN*	N	PRE	POST	GAIN*
9	77	6.9	11.6	4.7	35	11.5	17.8	6.3	24	10.1	12.5	2.4
10	30	10.5	15.6	5.1	71	10.7	16.1	5.4	71	9.5	12.1	2.6
11	6	12.3	18.3	6.0	45	9.5	15.1	5.6	42	8.9	11.9	3.0
TOTALS	113	8.1	13.1	5.0	151	10.5	16.2	5.7	137	9.4	12.1	2.7

NOTE: number of objectives for each level: Level I (25), Level II (25), Level III (15).

* Post-test minus pre-test.

. Level II gains were higher than Level I gains although their pre-test average was higher.

. While Level III gains were lowest, the pre-test scores were proportionally highest for this group creating a ceiling effect. Pre-test score averages and proportion of maximum score are: Level I 8.1 (32 percent), Level II 10.5 (42 percent), and Level III 9.4 (63 percent).

. Level III post-test scores 12.1 (81 percent) were proportionally highest.

Table 13. Receptive language fluency.

Number and percent of students advancing at least one level on the New York City Language Fluency Scale, by pre-test rating and grade.

	GROUP PRE-TESTED 4			GROUP PRE-TESTED 5			GROUP PRE-TESTED 6		
GRADE	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING
9	44	28	64	68	42	62	19	14	74
10	61	41	67	52	44	85	3	3	100
11	29	25	86	11	10	91	1	1	100
TOTAL	134	94	70	131	96	73	23	18	78

Group 4 . The criterion of 40 percent increasing rank was surpassed in all grades.

. Increases were highest among eleventh graders.

Group 5 . The criterion of 60 percent increasing rank was surpassed in all grades.

. Increases were highest among eleventh graders.

Group 6 . The criterion of 60 percent increasing rank was surpassed in all grades.

Table 14. Expressive language fluency.

Number and percent of students advancing at least one level on the New York City Language Fluency Scale, by pre-test rating and grade.

	GROUP PRE-TESTED D			GROUP PRE-TESTED E			GROUP PRE-TESTED F		
GRADE	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING	N	NUMBER ADVANCING AT LEAST ONE LEVEL	% ADVANCING
9	40	27	68	70	37	53	26	21	81
10	82	50	61	52	34	65	6	6	100
11	53	35	66	11	7	64	3	3	100
TOTAL	175	112	64	133	78	59	35	30	86

Group D .The criterion of 40 percent increasing rank was surpassed in all grades.

. Increases were highest among ninth graders.

Group E . The criterion of 60 percent increasing rank was barely missed (59 percent) by the group as a whole.

. Only the ninth grade group failed to reach the criterion.

. The rank increases ranged from 53 percent to 65 percent.

Group F . The criterion of 70 percent increasing rank was surpassed in all grades.

Language Fluency Overview

The proportion of students who improved in receptive fluency was 72 percent and the proportion who improved in expressive fluency was 64 percent. In addition, fewer students pre-tested at the lower levels for receptive (288) than for expressive (343).

Expressive Group	Number	% Increasing	Receptive Group	Number	% Increasing
D	175	64%	4	134	70%
E	133	59%	5	131	73%
F	35	86%	6	23	78%
Total	343	64%	Total	288	72%

It appears that students' progress in receptive language is faster than progress in expressive language.

Table 15. Native language reading achievement.

Significance of mean total raw score differences between initial and final test scores in native language reading achievement of students with full instructional treatment on the Prueba de Lectura.

(total reading, forms CE and DE, level 3, by grade)

GRADE	N	PRE MEAN	STANDARD DEVIATION	POST MEAN	STANDARD DEVIATION	DIFFERENCE	CORR PRE/POST	t	p	ES
9	149	61.1	21.6	64.2	22.8	3.1	.61	1.89	.06	.15
10	218	70.3	22.1	74.4	23.1	4.1	.72	3.62	.000	.25
11	204	80.5	22.3	85.3	21.9	4.8	.80	4.89	.000	.34
12	38	83.0	20.1	94.7	14.3	11.7	.46	3.88	.000	.63

. All but ninth-grade differences were statistically significant.

. The educational significance of the differences increase with grade.

. Both pre and post score means increase with grade.

Table 16. Mathematics achievement.

Significance of mean total raw score differences between initial and final test scores in mathematics achievement of students with full instructional treatment on the Metropolitan Achievement Test, Form F.

(Chapter 720 students)

		PRE-TEST		POST-TEST						
GRADE	N	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	CORR. PRE/POST	t	p	ES
9	34	13.2	4.7	15.7	5.1	2.5	.55	3.12	.003	.54
10	13	15.3	5.4	17.7	4.6	2.4	.59	1.86	.05	.52
TOTAL	47	13.8	5.0	16.3	5.0	2.5	.57	3.67	.001	.54

. Gains were significant for all groups.

. Gains were of medium educational significance.

Table 17. Number and percent of students passing teacher-made examinations in mathematics.

COURSE	FALL 1980 N	FALL 1980 NUMBER PASSING	FALL 1980 PERCENT PASSING	SPRING 1981 N	SPRING 1981 NUMBER PASSING	SPRING 1981 PERCENT PASSING
Remedial Math I	26	17	65%	2	2	100%
Remedial Math II	62	45	73%	40	28	70%
General Math I	165	91	55%	106	69	65%
General Math II	78	62	79%	85	50	59%
General Math III	71	46	65%			
Fundamental Math	1	1	100%			
Algebra I Academic	56	38	68%	74	57	77%
Algebra II Academic	71	53	75%	45	31	69%
Algebra III Academic	39	28	72%	54	44	81%
Transitional Math	68	57	84%	96	61	63%
Geometry I	31	20	64%	20	12	58%
Geometry II				12	9	75%
TOTAL	668	458	69%	534	363	68%

- The criterion objective of 65 percent passing was surpassed during both spring and fall.
- The lowest passing percentage in the fall was 55 percent in General Math I; the lowest passing percentage in the spring was 58 percent in Geometry I.
- The percentage of students in the academic track increased from 40 percent in the fall to 58 percent in the spring.
- The number of students reported to be taking math dropped 20 percent from 669 in the fall to 535 in the spring.

Table 18. Number and percent of students passing teacher-made examinations in science.

COURSE	FALL 1980 N	FALL 1980 NUMBER PASSING	FALL 1980 PERCENT PASSING	SPRING 1981 N	SPRING 1981 NUMBER PASSING	SPRING 1981 PERCENT PASSING
Biology I, Academic	70	48	69%	66	55	83%
Biology I, General	42	30	71%	38	28	74%
Biology II, Academic	39	34	87%	51	42	82%
Biology II, General	40	34	85%	37	26	70%
General Science I	101	78	77%	52	39	75%
General Science II, Academic	68	48	71%	27	21	78%
General Science II, General	47	21	45%	83	59	71%
TOTAL	407	293	73%	354	270	76%

- The criterion objective of 65 percent passing was surpassed during both fall and spring.
- All courses surpassed the criterion objective except General Science II during the fall semester.
- The proportion of students taking academic track courses dropped from 44 percent in the fall to 36 percent in the spring.

Table 19. Number and percent of students passing teacher-made examinations in social studies.

COURSE	FALL 1980 N	FALL 1980 NUMBER PASSING	FALL 1980 PERCENT PASSING	SPRING 1981 N	SPRING 1981 NUMBER PASSING	SPRING 1981 PERCENT PASSING
American History I, Academic	98	62	63%	30	24	80%
American History I, General	60	37	62%	22	14	64%
World History I, Acad.	71	51	72%	88	64	73%
World History I, Gen.	68	31	46%	81	53	65%
World History II, Acad.	41	38	93%	66	41	62%
World History II, Gen.	12	10	83%	26	24	92%
World Geography I, Academic	60	40	67%	86	57	66%
World Geography I, General	49	12	24%			
Economics, Academic	23	18	78%	21	20	95%
Economics, General	12	12	100%			
TOTAL	495	311	63%	420	297	71%

- Although the criterion objective of 65 percent passing was not met in the fall (63 percent), it was surpassed in the spring. The average for both semesters was 66 percent, meeting the objective for the year.
- The percentage of students taking academic track courses increased from 59 percent in the fall to 69 percent in the spring.
- The passing percentage for academic classes was 71 percent both fall and spring.
- The passing percentage for general classes was 51 percent in the fall and 71 percent in the spring.

Table 20. Number and percent of students passing teacher-made examinations in native language arts.

COURSE	FALL 1980 N	FALL 1980 NUMBER PASSING	FALL 1980 PERCENT PASSING	SPRING 1981 N	SPRING 1981 NUMBER PASSING	SPRING 1981 PERCENT PASSING
Native Language Arts (NLAX)	12	8	67%	8	4	50%
Spanish 1S	55	49	89%	31	12	39%
Spanish 2S	95	70	74%	50	36	72%
Spanish 3S	151	106	70%	89	77	86%
Spanish 4S	35	30	86%	112	101	90%
Spanish 5S	45	36	80%	23	18	78%
Spanish 3SX	3	1	33%	2	1	50%
Spanish 4SX	1	1	100%	1	1	100%
Spanish 6SX & 6S	4	4	100%	31	31	100%
TOTAL	401	305	76%	347	281	81%

- The criterion objective of 65 percent passing was surpassed both semesters.
- Native language arts courses had the highest passing percentages of all criterion referenced classes.

Table 21. Significance of the difference between attendance percentages of program students and the attendance percentage of the school.

Average school-wide attendance percentage: 78.5

GRADE	N	MEAN PERCENTAGE	STANDARD DEVIATION	PERCENTAGE DIFFERENCE	t	p
9	201	91.1	15.3	12.6	11.68	.001
10	262	92.1	10.5	13.6	20.97	.001
11	225	93.4	7.0	14.9	31.93	.001
12	50	91.9	8.9	13.4	10.65	.001
TOTAL	738	92.2	11.1	13.7	33.53	.001

- Differences for all grades were all highly significant.
- The large number of students involved indicate that they have a large impact on total school attendance.

SUMMARY OF FINDINGS

In English reading achievement in the fall, program students demonstrated a very good average gain of 1.64 objectives mastered per month of instruction. In the spring, the average gain was 1.57 objectives mastered per month. This slight decrease from the fall rate was probably due to the higher proportion of students tested in the spring with Level III of the CREST which contains fewer objectives than Levels I and II.

In English fluency, 17 out of 18 groups of program students met the criteria set by the program in the expressive and receptive modes on the New York City Language Fluency Scale.

In native language reading achievement, tenth-, eleventh-, and twelfth-grade students made gains which were statistically and educationally significant. Gains for ninth graders closely approached statistical significance.

In mathematics achievement, a small group of Chapter 720 students made gains which were statistically and educationally significant. The overall passing rate for program students enrolled in mathematics courses in the fall was 69 percent. The only groups failing to reach the program criterion of 65 percent passing were students enrolled in General Math I (55 percent) and Geometry I (64 percent). In the spring, the overall passing rate in mathematics courses was 68 percent. Students in General Math II, Transitional Math, and Geometry I failed to reach the program objective in this area.

The overall passing rate in science courses in the fall was 73 percent. Students enrolled in General Science II, General were the only group who failed to met the program criterion of 65 percent passing. The spring overall passing rate in science courses was 76 percent. All groups of program students met the program objective in their spring science courses.

The overall passing rate in social studies courses in the fall, at 63 percent, was close to, but did not reach the 65 percent criterion. Scores ranged from 24 percent passing in World Geography I, General to 100 percent passing in Economics, General. In the spring, the overall passing rate in social studies courses was 71 percent. Only two groups of students failed to reach the program objective of 65 percent passing in the spring: students in World History II, Academic (62 percent) and American History I, General (64 percent).

In native language arts classes in the fall, the overall passing rate was 76 percent. Only the three students enrolled in Spanish 3SX failed to meet the program objective of 65 percent passing. The overall spring passing rate was a very good 81 percent. The small group of students enrolled in Native Language Arts (8 students), Spanish 3SX (2 students), and Spanish 1S (31 students) did not reach the program criterion in this area.

The attendance rate of program students at all grade levels was significantly higher than that of the school as a whole.

VII. CONCLUSIONS AND RECOMMENDATIONS

The bilingual project at Brandeis High School served more than 800 students in 1980-81. The participants were all Spanish-speaking; the majority were immigrants from the Dominican Republic. Data collected from a student background questionnaire suggests that the typical program student is overage for his or her grade, and lives in an economically marginal household headed by a single parent. These students are under intense pressure to help support the household, and the program's demonstrated holding power is particularly impressive in this context.

The school's administration and mainstream faculty have expressed concern that students may be kept in the bilingual program for too long; however, data gathered from the questionnaire indicated that in spring, 1981, 77 percent of program participants had been in the U.S. for no more than three years. The majority had not studied English in their native country.

The program's large staff, working on two schedules, provided instruction in English as a second language, a broad array of content-area courses geared to academic- or general-track students, and Spanish-language courses ranging from basic skills to literature courses. Five grade advisors and a college vocational advisor provided crucial support services.

Student outcomes on the CREST test and teacher-made exams in Spanish and the content areas suggest that the program in 1980-81 sustained the high level of achievement which it has attained throughout the funding

cycle. Considerable strides were made as well in the non-instructional components, including curriculum development and staff development. It has proven difficult at Brandeis, as at other schools, to engage parents in bilingual program activities, and the widespread attendance area aggravated this problem.

The program achieved these positive results under circumstances which taxed the staff's energies, and tapped their reserves of good will. The 1980-81 school year was the final year of the programs' funding cycle; in view of slashes in the Federal budget, the program's future was uncertain. As late as June, 1981, it was unclear how services would be maintained the following September in the absence of Title VII monies, or what assignments would be given to individuals holding Title VII positions. As the school year drew to a close, staff members devoted considerable time to addressing these issues. Ambivalence toward the program expressed by the administration undermined the bilingual staff's confidence that the school was committed to "capacity building."

Several staffing changes disrupted program function. When the acting assistant principal and project director were directed to switch positions during the first week of the school year, the entire staff was disoriented for a time. The fact that these two staff members were, throughout the year, under consideration for the same administrative post inevitably caused some strain. Several other midyear changes in the staff due to illness or job shifts affected program activities.

The fact that the program functioned well under these circumstances attests to the motivation of its staff. The acting assistant principal's

commitment to staff development and the project director's rapport with students and parents contributed to the program's success.

Because this was the final year of the funding cycle, the evaluation team has made recommendations of a general nature, which are intended to inform future programs, at Brandeis or at schools which have encountered similar problems.

1. While two presentations were made at faculty meetings this year to improve relations between the bilingual program and the mainstream faculty, misconceptions apparently remain. The assistant principal and project director should make every effort to disseminate information about the program -- particularly about selection and placement and about student characteristics -- so that discussions of the program's merits might be based on fact rather than on arbitrary impressions or anecdotal material.

2. The acting assistant principal's practice of issuing, in writing, explicit instructions to staff members for implementing program policies has proven enormously useful to new and experienced teachers. It should be continued. At the same time, the A.P. might consider other methods of assisting new teachers, who may seek help from area coordinators in academic matters, but have sometimes been perplexed or overwhelmed by unfamiliar routines and administrative requirements.

The A.P. might also share more fully proceedings at the principal's cabinet meetings, since a number of staff members expressed the view

that the exchange of information between the school's administration and the program staff has not been sufficient in either direction.

3. The head grade advisor seems to be overburdened, having taken on special projects in the past which became part of her rapidly snowballing job description. It it is not possible to assign more paraprofessional support to her office, support services might be reviewed and pared down.

4. The principal questioned whether students might be mainstreamed sooner in the area of mathematics. The bilingual staff might assess students' needs in this area.

5. The school administration might assess the allotment of classroom space to bilingual teachers. The perception that these teachers must move from floor to floor, while mainstream teachers work in one classroom throughout the day, undermines morale.